

AMENDMENTS TO THE CLAIMS

1. (currently amended) A tool for performing end-to-end anastomosis between ~~two tissue structures~~ a first tissue structure and a second tissue structure each having at least two flaps at one end, comprising:

~~two clamps moveable relative to one another, each clamp~~ a first clip configured to hold the end of one tissue structure and to hold the flaps of that at least one flap of the first tissue structure;

a second clip configured to hold at least one flap of the second tissue structure;

wherein said clips are movable from a first position spaced apart from one another to a second position closer to one another in which each flap held by said first clip abuts a corresponding flap held by said second clip; and

at least one connector deployer oriented to deploy at least one connector completely through at least one of two abutting flaps.

2. (currently amended) The tool of claim 1, ~~wherein each clamp further comprises a tissue preparation device~~ further comprising a first clamp configured to hold the first tissue structure, and a second clamp configured to hold the second tissue structure; wherein said first clip is connected to said first clamp and said second clip is connected to said second clamp.

3. (currently amended) The tool of claim 1 ~~2~~, further comprising a jig, wherein each said clamp is connected to said jig.

4. (previously presented) The tool of claim 3, wherein at least one said clamp is fixed to said jig.

5. (previously presented) The tool of claim 3, wherein said jig comprises at least one rail, and at least one said clamp is slidably connected to at least one said rail.
6. (previously presented) The tool of claim 3, further comprising a handle connected to each clamp, wherein said handle is configured to urge at least one said clamp relative to said jig.
7. (previously presented) The tool of claim 3, wherein one said clamp further comprises at least one alignment boss, and wherein the other said clamp comprises at least one boss receiver defined therein.
8. (previously presented) The tool of claim 7, wherein each said alignment boss is substantially tubular.
9. (canceled)
10. (canceled)
11. (currently amended) The tool of claim ~~10~~ 1, wherein ~~each~~ at least one said connector is a staple.
12. (currently amended) The tool of claim ~~10~~ 2, wherein at least one clamp comprises an actuator configured to actuate at least one said connector deployer.
13. (previously presented) The tool of claim 12, further comprising a channel defined in at least one said clamp, wherein said actuator is movable through said channel relative to at least

one said connector deployer.

14. (currently amended) The tool of claim 1 2, wherein a first clamp comprises at least one connector deployer, and a second clamp comprises at least one connector receiver corresponding to said connector deployer on said first clamp.

15. (currently amended) The tool of claim 1 2, wherein each clamp comprises a first arm and a second arm moveable between an open position and a closed position.

16. (previously presented) The tool of claim 15, further comprising a clamping lever movably connected to at least one said clamp, wherein motion of said clamping lever to a predetermined position locks said first arm and said second arm into said closed position.

17. (currently amended) The tool of claim 1 2, wherein each clamp comprises a passage defined therein; further comprising a finger moveable between said clamps through said passages.

18. (currently amended) The tool of claim 1 2, wherein each said clamp further comprises at least one tissue knife configured for cutting at least one flap.

19. (withdrawn) A tissue preparation device, comprising:

a first pin; and

a measuring feature fixed relative to said pin.

20. (withdrawn) The tissue preparation device of claim 19, wherein said measuring feature is

a second pin spaced a fixed distance apart from said first pin.

21. (withdrawn) The tissue preparation device of claim 19, further comprising a surface connected to said pin, wherein said measuring feature is at least one marking on said surface.

22. (withdrawn) A method for performing end-to-end anastomosis between two tissue structures, comprising:

creating at least two flaps at the end of each tissue structure;

pressing each flap of one tissue structure into contact with at least one corresponding

flap of the other tissue structure; and

connecting the flaps to one another.

23. (withdrawn) The method of claim 22, further comprising selecting an interface dimension; wherein said creating is based on said interface dimension.

Amendments to the Specification

At page 3, line 20, add the following new paragraph:

FIG. 5A is a perspective view of the anastomosis tool of FIG. 5, showing tissue structures held by clamps of the anastomosis tool and flaps of the tissue structures held by clips of the anastomosis tool.

Amend the paragraph beginning at page 8, line 5 as follows:

Referring also to FIG. 5A, a tissue clip 32 is attached to each arm 22, 24 of each clamp 20. One edge of each clip 32 is attached to the surface of the corresponding arm 22, 24, and another edge of each clip 32 is free to move relative to the surface of the arm 22, 24 to allow the clip 32 to move between an open position and a closed position. Each clip 32 may include a number of teeth 34 or other gripping features at its free edge, to better grip a flap 8 of the tissue structure 2, 4 between the clip 32 and the corresponding arm 22, 24. Each clip 32 is initially in an open position in order to receive the corresponding flap 8. After the flaps 8 have been created by cutting the tissue structures 2, 4, each flap 8 is pulled relative to an arm 22, 24 of a clamp 20 such that a portion of the flap 8 extends into a space between a clip 32 and a surface of the arm 22, 24. A forceps or other tool may be used to move the flap 8. Once a portion of a flap 8 is moved into the space between a clip 32 and its corresponding arm 22, 24, the clip 32 is closed. The clip 32 includes one or more features for providing firm engagement between the free end of the clip 32 and the associated arm 22, 24 in the closed position. For example, the edge of each clip 32 that is connected to a corresponding arm 22, 24 may include a cam, lock, or other feature that engages a corresponding feature in the arm 22, 24 to hold the clip 32 closed. For example, the clips 32 may lock into place in the same or similar manner as the clamping levers 44 described below. In this way, each flap 8 is held securely against an arm 22, 24 by a clip 32. Advantageously, the clips 32 hold the

corresponding flaps 8 under tension, such that a portion of each flap 8 is held substantially flat against a contact surface 37 of each arm 22, 24. The contact surface 37 of each arm 22, 24 is the surface that faces the corresponding arm 22, 24 of the other clamp 20. Alternately, one or more clips 32 are detachable from the clamp 20. At least one of the clips 32 may be configured to hold more than one flap 8 at a time. Such a clip 32 may be a U-shaped or C-shaped clip that extends across at least a portion of both arms 22, 24 of the clamp 20.

Amend the paragraph beginning at page 13, line 23 as follows:

Referring also to FIG. 5A, motion ~~Motion~~ of the handle 60 and the clamps 20 stops when the flaps 8 contact one another, and the clamps 20 thus cannot move substantially closer to one another. This configuration of the anastomosis tool 30 may be referred to as the deployment position. In the deployment position, the contact surfaces 37 may be spaced apart from each other a small distance, due to the thickness of each flap 8. Alternately, the contact surface 37 of one clamp 20 may contact the contact surface 37 of the other clamp 20. The clamps 20 are not affirmatively locked together; rather, continued actuation of the handle 60 holds the clamps 20 together after the flaps 8 contact one another. Alternately, a locking mechanism (not shown) holds the clamps 20 together after the flaps 8 are brought into contact with one another. The locking mechanism may be a component of one or more clamps 20, of the jig 36, or may be a separate component used to hold the clamps 20 together.